

# Schottky-diode based radar system

# > Sub-THz FMCW Radar transceiver

Ultra compact, reliable sub-THz radar transceiver for NDT applications

High dynamic range up to 100 dB, high measurement rate of 7.6 kHz

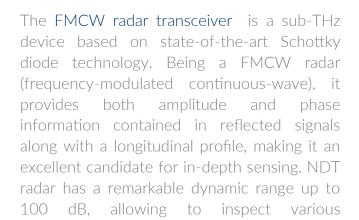
High spatial resolution up to 2 mm, positioning accuracy ±5 μm

Integrated ultra-stable linear hybrid-digital PLL

Integrated FPGA-based signal pre-processing

Refractive index extraction algorithm

Monostatic architecture



geometries from thick samples to absorbent

materials. In addition, the high measurement

rate (7.6 kHz) of NDT radar matches on-line

quality control requirements for industries, ensuring optimal capabilities. Specifically, tailored imaging module options, scanning kits and dedicated signal processing software, are also available to suit specific applications. NDT radar is a fully integrated, plug and play system and remotely controlled via a user-friendly software, guarantying the best user experience. The combination between excellent penetrating and high imaging resolution achieved by NDT radar makes it a versatile sensing tool.



### Features:

- Compact & reliable FMCW transceiver
- Up to 100 dB dynamics
- Fast measurement rate of 7.6 KHz
- 2 mm spatial resolution in air
- Fully integrated, plug & play
- Custom imaging & scanning modules
- Advanced signal processing software

# Applications:

- In-depth sensing for dielectric materials
  (Polymers, woods, ceramics, papers, composites, foods, rubber..)
- Volumetric imaging for quality control (Packing inspection, welding defect...)
- Contactless thickness measurement
- Precision positioning
- Material analysis
- Security screening

### Control:

✓ Remote with dedicated software via USB

# Connectivity:

- ✓ Power supply: 100-240 V AC
- ✓ Ethernet link

Specifications	FMCW rad	dar transceiver
Transceiver	Monostatic	
Operation mode	FMCW	
Frequency band	150 GHz	
Dynamic range	Up to 100 dB	
Measurement rate	7.6 KHz	
Positioning precision	< 5 μm	
Control	Remote USB	
Power supply	100-240 V AC	
Temperature range	0- 40 °C	
Dimension and weight		
HxLxW	25 cm x 25 cm x 10 cm	
Weight	3 Kg	
Extensions		
3D imaging		
Operation mode	Translation st	ages / robotic arm
Software	Data visualisation, data processing	
Optics (THz lenses)	2" f= 5 cm	2"f=10 cm
Spatial resolution X/Y	2 mm	4 mm
Thickness measurement		
Thickness range	Sub-mm up to tens of cm	
Accuracy	±5 μm	

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